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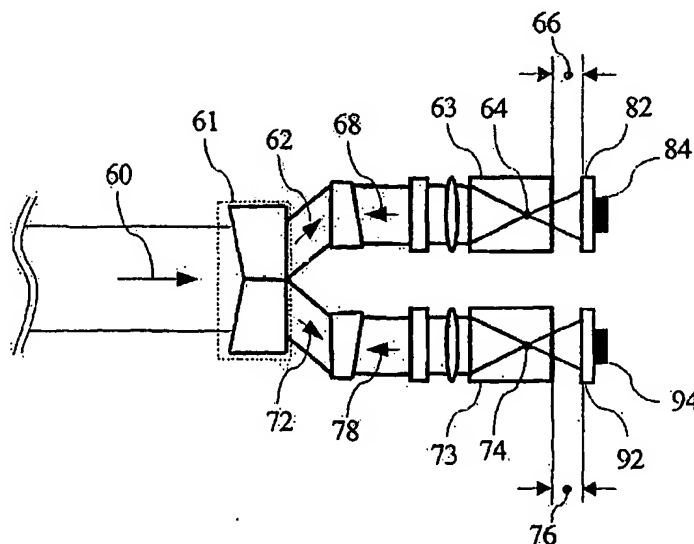
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(54) Title: APPARATUS AND METHOD FOR SELF-PHASE CONTROL WITH STIMULATED BRILLOUIN SCATTERING
PHASE CONJUGATE MIRROR



(57) Abstract: Disclosed are an apparatus and a method for controlling phases of beams to make relative phases of the beams "O" in a beam splitting amplification laser using a stimulated Brillouin scattering phase conjugate mirror. A procedure of making a phase difference between laser beams reflected from the phrase conjugate mirror "O" comprises a first step of inputting laser beams 104', ..., 114' and 124' reflected from the phrase conjugate mirrors to a light detector 150 through light path converters 131 and 132; a second step of using one of the reflected laser beams as a reference laser beam 104' and making the reference laser beam interfere with another reflected laser beam 114'; and a third step of detecting the interference result and finely driving piezoelectric elements 109 and 119 to control the positions of the reflectors 108, 118 and 128, to thereby make a phase difference between the laser beam 104' and 104' become "O".

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